FB-10/100MMC Series Media Converter

10/100Mbps Unmanaged MC User Manual

(Version 1.2)

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1. Overview

With the rich experience of studying US broadband access products in the past few years and fully assimilated with the product superiority of world-famous manufactures, Fibridge develops a series of Fiber Media Converter which is high-performance, cost effective and flexible solutions for a wide range of applications in the realm of LAN campus network, outside plant and MAN application.

Products package covers both standard 19 chassis and stand alone with internal power supply that significantly increases the reliability over competitive products. Exchange chips not only support 802.1QVLAN TGA, SPANNING TREE, but auto sensing 10M/100M, half/full duplex. Fibridge Media Converter series include double-strand and single-strand converters, as well as managed Media converter to meet your possible needs. This manual provides instruction of unmanaged Media Converters only.

2. Features

- Fully compatible with IEEE 802.3, IEEE802.3u and IEEE802.3x
- Support 10Base-T, 100Base-TX, 100Base-FX
- Support Half/Full-Duplex, Full-Duplex, Half-Duplex
- Support 802.1q VLAN TAG、Spanning Tree
- One single fiber strand meet client's possible needs
- Up to 120Km distance on single-mode fiber
- High performance and auto sensing exchange chip, which have full functionality of transferring and exchanging, guarantee the safety and stability of data transfer.
- MDI/MDI-X auto sensing
- Far end fault pattern received display
- CRC automatic fault checkout and correction
- Internal power supply, including AC220V or DC-48V
- Two types optional: stand-alone unit and Modular Chassis

3. Specification

3.1. Ethernet Port

1）Standard：IEEE 802.3、IEEE802.3u and IEEE802.3x

2）Available in 10Mbps, 100Mbps and 10/100 auto sensing

3）Auto sensing Full-Duplex and Half-Duplex operation

4）Connectors：RJ-45 Connector

5）Auto MDI/MDI-X connector cable selection

3.2. Optical Port

1）Adopt standard 1×9 pin optical transceiver module

2）Wavelength：850nm, 1310nm on multi-mode, 1310nm, 1550nm on single-mode

3）Transfer Distance：up to 120Km

4）Fiber core：8.3μm, 8.7μm, 9μm and 10μm on single mode fiber, 50μm, 62.5μm and 100μm on multi-mode fiber

5）connectors：SC/ST/FC at optional

6）Fiber Power Budget

Wavelength (nm)	Connector	Emit Power (dBm)	Sensitivity (dBm)	Saturation (dBm)	Max Dist. (Km)	Loss (dBm/Km)
MM850	SC/ST	-14 ~ -18.5	-31~ -34	-14	2	3
MM1310	SC/ST	-14 ~ -18.5	-31~ -34	-14	5	2
SM1310	SC/ST/FC	-6 ~ -15	Better than -34	-3	40	0.4
SM1310	SC/ST/FC	3 ~ -3	Better than -36	-3	80	0.4
1550 DFB	SC/ST/FC	3 ~ -3	Better than -36	-3	120	0.25

3.3. Environment

1）working environment ：

Temperature：5℃～40℃；

Humidity：30%～90%(25℃)；

Atmosphere pressure：86kPa～106 kPa.

2）Store and transportation enviroment：

Temperature：-20℃～60℃；

Humidity：20%～90%(25℃)；

Atmosphere pressure：86kPa～106 kPa。

3.4. Size

Device Size：132mm (width) × 122mm (depth) × 36mm (height)

Chassis Size：440mm (width) ×250mm (depth) × 125mm (height) (19' Width, 2.5U Height)

3.5. Power

Power Supply：100-240VAC, 50/60Hz or -48VDC

Consumption: <2W

4. Appearance

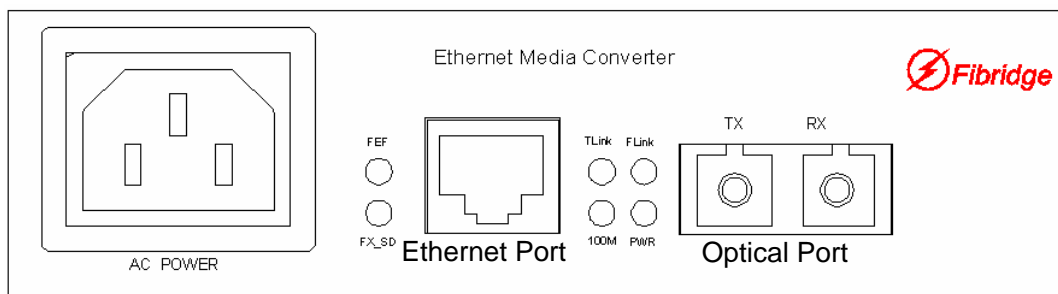## 4.1. Panel of the Standalone Media Converter

Figure1 Panel of the unmanaged standalone

4.2. Panel of the Module

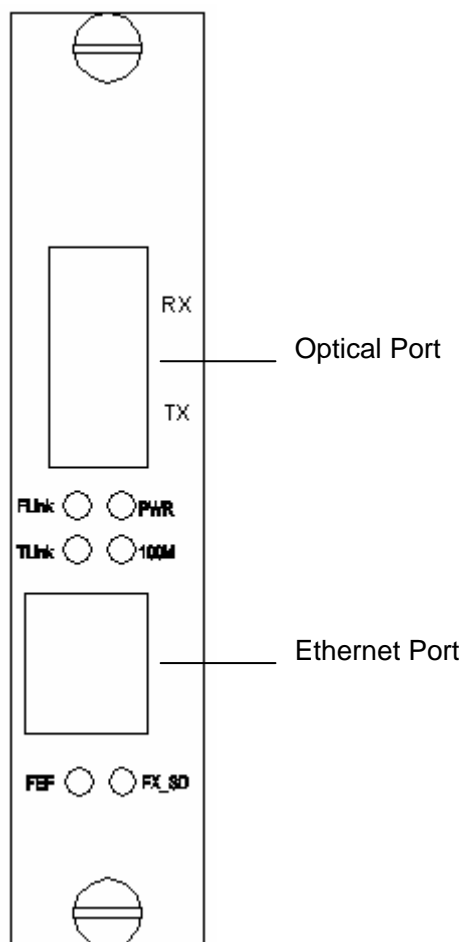Figure2 Panel of the unmanaged Module

4.3. LED Description of the Standalone and the Module

Table 1 LED Description

LED	Color	Function	Status	Description
PWR	Green	Power Status	ON	Power Supply OK
			OFF	No Power Supply
Tlink	Yellow	Twist-pair port Link/Act Status	ON	Twist-pair port linked
			BLINK	Twist-pair port is transferring data
			OFF	Twist-pair not linked
Flink	Yellow	Optical port Link/Act Status	ON	Optical port linked
			BLINK	Optical port is transferring data
			OFF	Optical port not linked
100M	Green	Twist-pair port speed	ON	The device's rate is 100M
			OFF	The device's rate is 10M
FEF	Red	Far end fault pattern received	BLINK	Receive FEF
			OFF	Not receive FEF
SD	Green	Fiber port signal detect	ON	Fiber signal detected
			OFF	Fiber unplugged

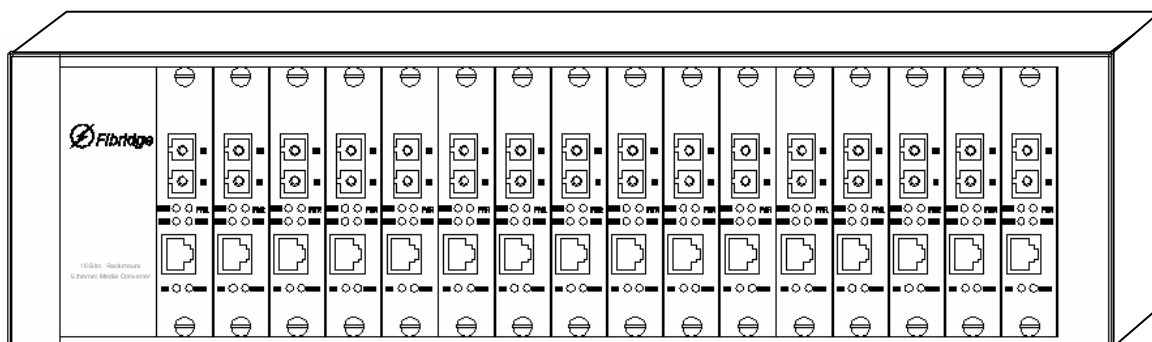### 4.4. Front Panel of the Chassis

Figure 3 Front Panel of the Chassis
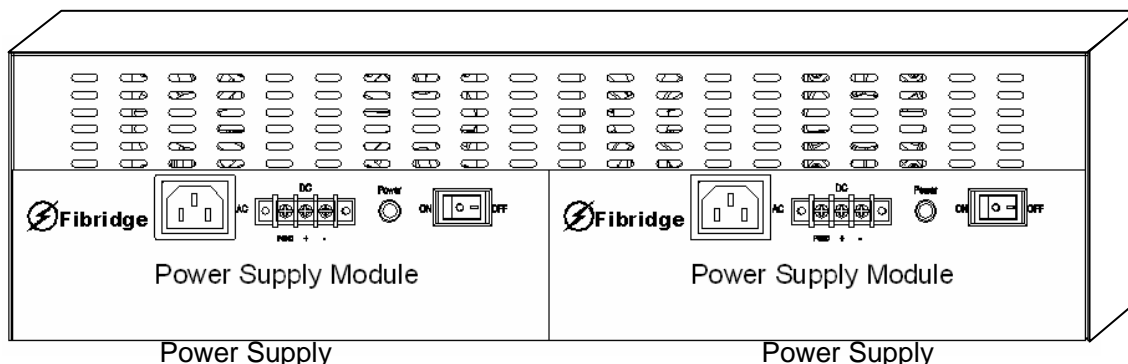
4.5. Back Panel of the Chassis

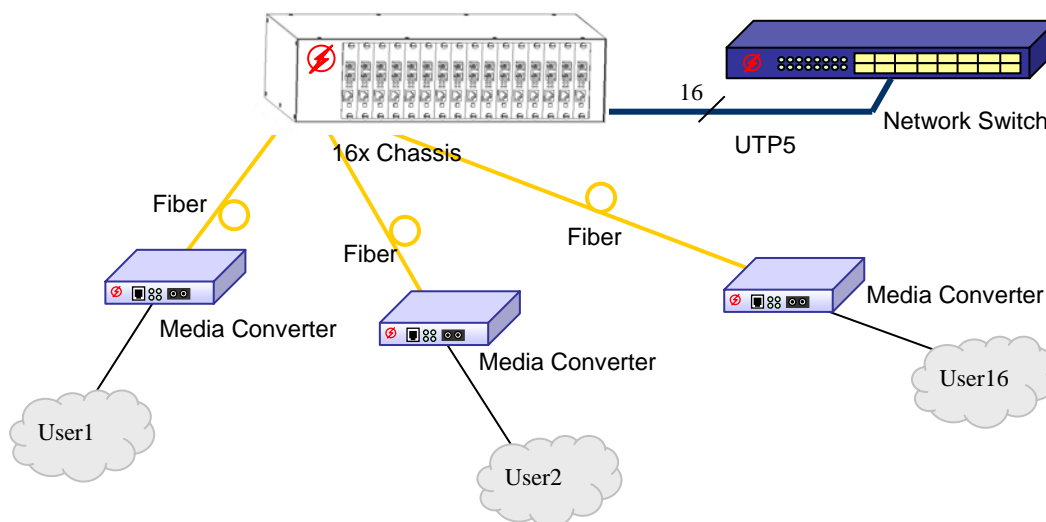Figure 4 Back Panel of the Chassis

5. Typical Applications

Figure 5 Typical Application Topology of the Media Converter

6. Installation

6.1. Standalone Installation

1）Small, flexible design allows for installation anywhere space is limited

2）Connect power after fiber and twist pair line is correctly connected

3）TLINK LED is on after reset

4）If circuit line correctly connected, PWR, TLINK and FLINK LED is on after reset checkout

5）If equipment words normally the status of LED is always ON. If it works under 100 Mbps Ethernet, the 100M LED is always ON

6）If all stipulated above work normally, circuit test could be carried out then During data transfer,

TLINK and FLINK LED blink

6.2. Chassis Installation

1）Install module on Chassis

2）Fix chassis on 19-inch device

3）Connect the main power and backup battery separately

4）Reset checkout is supposed to be carried out on each module. Please refer to the statement of Standalone unit stipulated above

5）Modules is hot pluggable

6.3. Single-strand and CWDM device

Fibridge can also provide single-strand or CWDM device. Single-strand device is the same to the Double-strand device, except the optical port, which should be used in pairs. For example, one device use 1510nm for transmitting, 1310nm for receiving, the other end should use 1310nm for transmitting, and 1550nm for receiving.

Figure 6 Single-strand Application

For CWDM device, besides the Media Converter, there is one CWDM device, which is a Passive Optical Device. The CWDM device can support up to 8 units of Media Converter to transmit and receive data in one fiber.
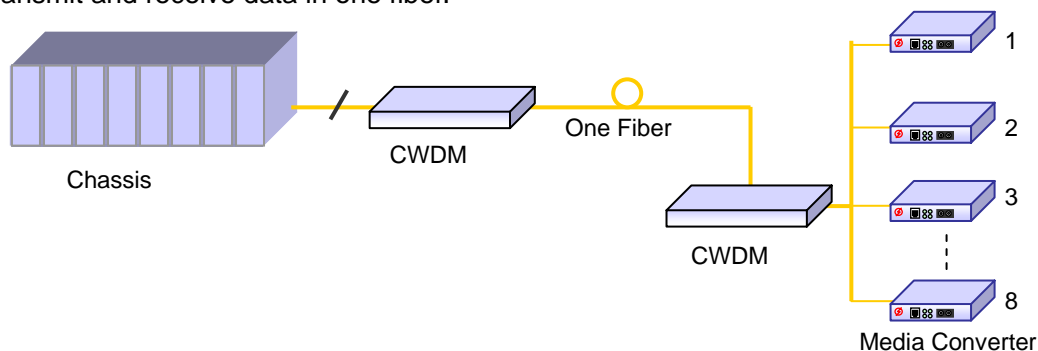
Figure 7 CWDM Application

7. Failures & Solutions

1）Failure：Power LED is off

Solution：check if the power line is connected correctly

2）Failure：TLINK LED is off after reset

Solution：

    a) check if twist pair line is connected correctly

    b) check if the Ethernet device connected with the converter is running normally

    c) change the MDI/MDI-X switch's status on the converter panel

3）Failure：FLINK LED is off after reset

Solution：

    a) check if the fiber is connected correctly

    b) Note：either RX or TX of the fiber line work abnormally, the Flink LED will turn off

4）Failure：LED is at normal status, data transfer abnormally

Solution：

    a) check the output power of converter optical port

    b) be sure no single mode fiber connected with multimode equipment

    c) check if it is used in pairs when single-strand converter is used

5）Failure：the devices are shutdown after work normally some time

Solution：

It is usually caused by Switch. In normal status, the Switch will take Cyclic Redundancy Check and throw away the faulty data. However, some faulty data could not be inspected and thus could not be sent out or thrown away. These faulty data will be stored in the buffer gradually until the switch is filled with them, which brings about the abnormal shut of Switch. Reset of either converter or Switch is the solution.

8. Typical Module:

8.1. Model:

FB-10/100MMC　Media Converter

FB-CHS Chassis

8.2. Part Number (P/N)

F1-M32CA Multimode, 1310nm, SC, standalone, 220VAC power supply

F1-M31CD Multimode, 850nm, SC, standalone, -48VDC power supply

F1-S3042CA Single mode, Distance: 40km, 1310nm, SC, standalone, 220VAC power supply

F1-S3082CA Single mode, Distance: 80km, 1310nm, SC, standalone, 220VAC power supply

F1-S3042TM Single mode, Distance: 40km, 1310nm, ST, Module

F1-W3042CA Single Strand Single mode, Distance: 40km, transmit 1310nm, SC, Standalone

F1-W3043CA Single Strand Single mode, Distance: 40km, transmit 1550nm, SC, Standalone

F1-W3042CM Single Strand Single mode, Distance: 40km, transmit 1310nm, Module

F1-W3043CM Single Strand Single mode, Distance: 40km, transmit 1550nm, Module

FC-216 16-slot Chassis

FP-2100A   16-slot chassis power supply module, AC 220V input, 100Watt output

FP-2100D   16-slot chassis power supply module, DC -48V input, 100Watt output

** We Reserve the right to vary descriptions and specifications without notice due to Fibridge's policy of continuous product improvement**